CLAIMS

1. A process for fabricating a semiconductor structure, comprising:

depositing a nitride layer on a semiconductor substrate with a first tool, wherein the nitride layer comprises silicon and nitrogen; and

depositing an anti-reflective layer on the semiconductor substrate with the first tool.

2. The process of claim 1, wherein the depositing of the nitride layer occurs before the depositing of the anti-reflective layer.

3. The process of claim 1, wherein the depositing of the anti-reflective layer occurs before the depositing of the nitride layer.

4. The process of claim 1, wherein the depositing of the nitride layer comprises reacting SiH_2Cl_2 and NH_3.

5. The process of claim 4, wherein the volumetric flow rate ratio for SiH_2Cl_2:NH_3 is from 0.3:1 to 5:1.

6. The process of claim 1, wherein the nitride layer comprises silicon deficient nitride.

7. The process of claim 1, wherein the nitride layer comprises silicon rich nitride.

8. The process of claim 1, wherein the nitride layer comprises a graded silicon nitride layer.

9. The process of claim 1, wherein the depositing of the anti-reflective layer comprises reacting SiH_2Cl_2, NH_3, and N_2O.

10. The process of claim 1, wherein the anti-reflective layer comprises silicon oxynitride.

11. The process of claim 1 further comprising depositing an oxide layer on the semiconductor substrate with a second tool, wherein the first tool and the second tool are the same.

12. The process of claim 11, wherein the depositing of the oxide layer comprises reacting SiH_2Cl_2 and N_2O.

13. The process of claim 1, wherein the first tool comprises a low-pressure chemical vapor deposition tool or a plasma-enhanced chemical vapor deposition tool.

14. A process for fabricating a semiconductor device, comprising:

forming a semiconductor structure by the process of claim 1; and

forming a semiconductor device from the semiconductor structure.

15. A process for making an electronic device comprising:

forming a semiconductor device by the process of claim 14; and

forming the electronic device comprising the semiconductor device.

16. A process for fabricating a semiconductor structure comprising:

depositing a nitride layer on a semiconductor substrate in a sealed chamber, wherein the nitride layer comprises silicon and nitrogen; and

depositing an anti-reflective layer on the semiconductor substrate in the sealed chamber, wherein the depositing of the nitride layer and the depositing of the anti-reflective layer are both performed without opening the sealed chamber.

17. The process of claim 16, wherein the depositing of the nitride layer occurs before the depositing of the anti-reflective layer.

18. The process of claim 16, wherein the depositing of the anti-reflective layer occurs before the depositing of the nitride layer.

19. The process of claim 16, wherein the depositing of the nitride layer comprises reacting SiH_2Cl_2 and NH_3.

20. The process of claim 16, wherein the nitride layer comprises silicon deficient nitride.

21. The process of claim 16, wherein the nitride layer comprises silicon rich nitride.

22. In a process for fabricating a semiconductor structure wherein a nitride layer is deposited on a semiconductor substrate in a sealed chamber, wherein the nitride layer comprises silicon and nitrogen, and wherein an anti-reflective layer is deposited on the semiconductor substrate in the sealed chamber, the improvement comprising:

depositing the nitride layer and the anti-reflective layer on the semiconductor substrate without opening the sealed chamber.

23. In a process for fabricating a semiconductor structure wherein a nitride layer is deposited on a semiconductor substrate with a first tool, wherein the nitride layer comprises silicon and nitrogen, and wherein an anti-reflective layer is deposited on the semiconductor substrate using a second tool, the improvement comprising:

depositing both the nitride layer and the anti-reflective layer on the semiconductor substrate with the first tool.